

Big Ox's Certified Response to EPA's Clean Air Act Information Request

I certify that the following statements are accurate and that Big Ox has searched for and located the attached documents in its onsite and offsite records.

I certify under penalty of law that I have examined and am familiar with the information in the enclosed documents, including all attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are, to the best of my knowledge and belief, true and complete. I am aware that there are significant penalties for knowingly submitting false statements and information, including the possibility of fines or imprisonment pursuant to Section 113(c)(2) of the Act, and 18 U.S.C. §§ 1001 and 1341.

If Big Ox discovers any additional responsive data or information, Big Ox will supplement this response.

a. Question 1

Correspondence regarding the recent hydrogen sulfide issues should be sent to:

John Foscatto
General Counsel, Big Ox Energy
6601 County Road R
Denmark, WI 54208
920-863-3043
JFoscatto@BOETeams.com

b. Question 2

A description of Big Ox facility operations can be found in Exhibit A, in the Air Quality Construction Permit Application, in the Project Description. We have also attached here as Exhibit B an overall process diagram.

c. Question 3

Big Ox monitors the composition of the biogas in the digesters that is routed to the flare. Big Ox monitors for methane, carbon dioxide, and hydrogen sulfide. The concentration of hydrogen sulfide in the biogas has been consistently low, less than 500 ppmv, and appears to be trending

down. The highest recorded concentration in January 2017 was 77 ppmv. For additional information on the flare, please see the attached narrative drafted by Chad Olsen, a professional engineer with engineering consultant McMAHON (Exhibit C).

d. Question 4

The overall gas flow from the digesters flows through flow meter FE60150, meaning it registers the total amount of gas produced by the digesters that is currently being sent to the flare. We are attaching here the relevant information of which Big Ox is currently aware: raw data on the flow of gas to the FE60150 flare, as well as a chart showing daily flow to FE60150 (Exhibit D). Please also see information on the flare attached as Exhibit C.

e. Question 5

Big Ox does not record flare temperature or actively monitor the flare. All monitoring is done by the program logic contained in the flare Operator Interface Panel. We have attached here as Exhibit E the manual for the biogas flare monitor, which explains how the flare and gas flow are monitored and controlled. There is no data from the flare system that is readily available in a legible format to submit to EPA. Please see information on the flare attached as Exhibit C. An explanation of preventative shutdown systems follows, which is explained in Exhibit E:

- Logic: A combustion safety system, which includes a flame safeguard package, monitors specific parameters and discontinues operation if an unsafe condition occurs. An ultraviolet, self-checking flame scanner detects both pilot flame and main flame. The flame scanner is unable to distinguish between flame sources. Typical fault conditions include:
- Flare High Temperature Shutdown: Flare High Temperature Shutdown occurs the moment a temperature above the high temperature switch set point value is detected within the flare enclosure by a dedicated high temperature thermocouple. The "Flare Fault" light illuminates immediately and system operation discontinues.
- Flare Low Temperature Shutdown: Flare Low Temperature Shutdown occurs when a temperature below the low temperature switch set point value is detected within

the flare enclosure by the selected temperature control thermocouple and exists for ten minutes consecutively. The "Flare Fault" light illuminates and system operation discontinues.

- Pilot Flame Failure and Shutdown: Pilot Flame Failure occurs during the ignition sequence when the flame scanner is unable to detect the presence of flame inside the flare enclosure. When Pilot Flame Failure occurs, system operation is interrupted momentarily. Then the entire purge cycle and ignition sequence are repeated automatically. A Shutdown occurs only after three consecutive Failures, or unsuccessful attempts. After the final Pilot Flame Failure occurs, the "Flare Fault" light illuminates and system operation discontinues.
- Main Flame Failure and Shutdown: Main Flame Failure occurs after the ignition sequence is complete when the flame scanner is unable to detect the presence of flame inside the flare enclosure. When Main Flame Failure occurs, system operation is interrupted momentarily. Then the entire purge cycle and ignition sequence are repeated automatically. A Shutdown occurs only after three consecutive Failures, or unsuccessful attempts. After the final Main Flame Failure occurs, the "Flare Fault" light illuminates and system operation discontinues.

f. Question 6

Because the Big Ox facility is still in its build-up phase, ramping up to full operation and gas production, the facility is running its flare nearly continuously to burn off any gas generated. Therefore, the facility does not have “flaring events.” The facility does not currently track “flaring events” and so it has no data to provide.

g. Question 7

As previously stated, the biogas cleanup skid system has not yet been used.

h. Question 8

Big Ox has no readily available data to confirm any periods when anaerobic digestion biogas has been emitted directly to the atmosphere, and so it has no descriptions, data, or calculations to provide.

i. Question 9

Tanker trucks will be used to deliver hauled-in material with higher solid content that is used in the digester. For a period of time, the facility's wastewater was being transported to the publicly owned treatment works ("POTW") via tanker trucks in order to bypass the sewer line; Big Ox resumed piped discharge of their wastewater to the POTW on January 4, 2017. The facility is not required to control or monitor air emissions from the tanker trucks and does not do so. This issue was raised in Big Ox's application for an air permit and was considered during the air permit approval process.

j. Question 10

The typical on-site quantity of methane at the Big Ox facility is estimated at 2,016 pounds. Big Ox does not store or utilize methane at levels that would require it to participate in EPA's Risk Management Plan ("RMP") program, and so it does not. Please see the attached letter from our experienced environment & safety consultants, who conducted an on-site inspection this week and concluded that Big Ox is not subject to EPA's Clean Air Act authority under Section 112(r) or to EPA's RMP program (Exhibit F).

k. Question 11

The typical on-site quantity of hydrogen sulfide at the Big Ox facility is estimated at 47 pounds. Big Ox does not store or utilize hydrogen sulfide at levels that would require it to participate in EPA's Risk Management Plan ("RMP") program, and so it does not. Please see the attached calculations sheet establishing why Big Ox is not subject to the RMP program (Exhibit F).

Big Ox does not store, separate, isolate, or treat the hydrogen sulfide that develops as an unintended byproduct of its processes. It constitutes between 0.002% to 0.05% of the biogas produced by Big Ox, and remains in the enclosed digesters and piping system.

l. Question 12

On October 19, 2016, an employee of Big Ox contractor and equipment supplier Clean Water Technologies was on-site working on the Gas Energy Mixing (“GEM”) system, which had a mechanical issue. The next morning, the employee was experiencing eye irritation, so he decided to seek medical attention. Big Ox cannot confirm the cause of the employee’s eye irritation and is unaware of any hydrogen sulfide release that occurred on October 19, 2016.

On December 14, 2016, an employee working to install a process pipe suffered a loss of oxygen when biogas, consisting of over 99% methane and carbon dioxide, was accidentally released from the digester. This employee then fell from where he was working as a result of the oxygen deprivation and suffered an injury. Because the release was of biogas, there is no information to provide related to any of the subparts to Question 12. Because this pipe has now been secured, a similar release is not likely to occur.

Because hydrogen sulfide was not the cause of these two incidents, Big Ox has no further information to provide in response to the subparts of Question 12.

m. Question 13

Because Big Ox is not regulated under the RMP program, it is not required by the Clean Air Act to implement design and operating standards to prevent a release of hydrogen sulfide. (See Exhibit F). Therefore, Big Ox has no information to provide in response to this question.

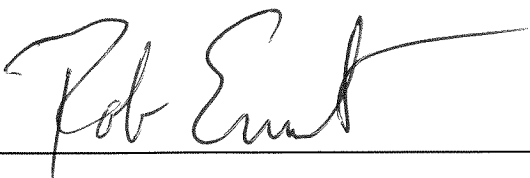
n. Question 14

Because Big Ox is not regulated under the RMP program, it is not required by the Clean Air Act to identify process hazards related to potential accidental release. (See Exhibit F). Therefore, Big Ox has no information to provide in response to this question.

o. Question 15

Because Big Ox is not regulated under the RMP program, it is not required by the Clean Air Act to monitor for potential emissions of hydrogen sulfide. (See report attached as Exhibit F). Therefore, Big Ox has no information to provide in response to this question.

Signature



Date: 1/27/17

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